

## APPENDIX C: INTERIM PLAN FOR SOUNDSCAPE PRESERVATION

Director's Order #47 mandates protection of natural soundscapes in national parks, since natural sounds "are intrinsic elements of the environment" and components of "the scenery and the natural and historic objects and the wild life" protected by the National Park Service Organic Act. In particular, Director's Order #47 calls for the development of a soundscape preservation and noise management plan in all park units. In addition, it directs superintendents to "lessen the impact of noise in parks by identifying the inappropriate and intrusive noise sources and by implementing any immediately feasible mitigation or preventative measures."

This document describes interim measures the National Park Service will implement to protect the natural soundscape at Denali National Park and Preserve, and briefly outlines its future planning and research efforts for long-term soundscape preservation and noise management.

### 1) Natural Soundscape

Legislation and past management history recognize that Denali National Park and Preserve is important for its protection of wilderness resource and wilderness recreation values. System-wide, the National Park Service (NPS) includes natural soundscapes as significant components of wilderness. Therefore, at Denali, the NPS will seek to minimize the intrusion of human-generated noise on the natural soundscape while recognizing that legislation also calls for recreational and subsistence access that may conflict with this resource protection goal. These conflicts will be resolved through the public planning process, but the NPS endeavors, in both interim and final plans, to find ways to provide reasonable access without compromising the park's natural soundscape.

### 2) Sources of Noise

The National Park Service will initially address the sources of human noise that occur regularly – though sometimes only during particular seasons – in various park soundscapes. Noise sources have been identified through existing NPS noise-monitoring projects, visitor comments, and the observations of park staff. The NPS will systematically identify noise sources and the character of the park's natural soundscape as part of ongoing research work (see Part 4 below).

Sources of noise include:

#### a. Bus and Other Vehicle Traffic

Noise from bus traffic is one of the most frequently heard noises along the park road west of Savage River. Diesel engines are heard predominantly, but the sound from brakes and gears also carries well beyond the road corridor. Private vehicles – RVs, trucks, cars – are also heard along the road, particularly east of Savage River. Highway traffic on the George Parks Highway, which is almost entirely outside the park boundary, is heard throughout the portion of the park that overlooks the Nenana River and Broad Pass.

#### b. Maintenance Vehicles.

The National Park Service operates a variety of maintenance equipment for the upkeep of the park road and facilities. Road graders, dump trucks, pump trucks, garbage trucks and many other kinds of vehicles are active regularly.

#### c. Generators.

Park facilities in the entrance area, Talkeetna, and Headquarters are connected to commercial power: however, facilities west of Headquarters on the park road run off stand-alone generating systems. Wonder Lake Ranger Station, Eielson Visitor Center, and Toklat Road Camp are provided power entirely by diesel generators that generally run 24 hours a day. In addition, recreational vehicles (RVs) at Riley Creek, Savage River, and Teklanika River Campgrounds run small generators to provide electricity, and the NPS runs small gasoline-powered generators at Savage and Teklanika Campgrounds to power the well pumps.

#### d. Aircraft.

NPS aircraft, scenic air tours, military aircraft, commercial aviation, local commercial carriers

(“bush aviation”), and general aviation impact the soundscape of Denali. Aircraft are an important issue because they can be heard over wide areas in the park backcountry and use levels are increasing dramatically. They also impact frontcountry areas when idling or taking off on airstrips at the eastern end of the park or in Kantishna.

e. Snowmobiles.

Snowmobiles are prohibited in the Old Park, but are used extensively in park additions on the south side of the Alaska Range and, to a more limited degree, along the north boundary of the Old Park. During months that have warmer temperatures and longer daylight hours (particularly March and April), snowmobile noise in popular areas in the southern additions, such as the Dunkle Hills, Bull River, and other locations near Broad Pass, can often be heard more than 50% of the time during weekend days. Single snowmobiles can be heard for at least three miles, even in rolling forested areas.

f. Trains.

The Alaska Railroad, where it is close to or inside the national park from Broad Pass through Healy, can be heard at great distances.

g. Amplified Human Voice.

In several places, amplified human voice is an intrusion on the natural soundscape. This is particularly true at Eielson Visitor Center where bus dispatchers use an amplification system to announce bus departures, and the sound can be heard well beyond the immediate vicinity of the Visitor Center. However, it is also a regular intrusion at the train depot where amplification is used to direct passengers, and at the park kennels where rangers use an amplifier to deliver interpretive programs. Also, work crews sometimes play music loudly at the work site.

### **3) Mitigation Actions**

The actions listed here are those that the National Park Service is presently able to implement to protect natural sound at Denali, primarily by changing its own operations, equipment, and procedures. The NPS goal in this interim phase is to minimize the intrusions of motorized or other mechanical sound within existing operations and to identify needed planning and research required for further action.

a. Bus and other vehicle traffic

Park tour and shuttle buses presently turn off their engines, rather than idling, at wildlife stops so that passengers can listen as well as watch. Additional actions include:

- i. Further investigate the possibility of converting the bus fleet to a quieter engine technology. The park’s present research indicates that compressed natural gas engines would be 80-90% quieter than the existing diesel engines and would provide other environmental benefits. Consider mandating a phase-in of these or other quieter engines as part of the new concession contract.
- ii. Encourage the use of the Savage River Shuttle and sled dog demonstration buses to minimize noise from vehicle traffic beyond the Visitor Center.
- iii. Implement the decision made in the *Entrance Area and Road Corridor Plan* to pursue a community transportation system. This system would be developed jointly with the neighboring business community and would provide mass transit between the park entrance and the commercial services area outside the park, again minimizing the number of vehicles and associated noise inside the park.
- iv. Encourage NPS staff to carpool, walk or bike between Headquarters and housing areas, and take the bus. NPS vehicles will be turned off during periods of inactivity.
- v. No action is suggested for traffic noise from the George Parks Highway at this time.

b. Maintenance Vehicles

Presently, all heavy equipment is purchased with standard sound-deadening packages that include quieter mufflers and noise-deadening insulation in the engine compartments. Minor additional gains may be possible through improved braking systems on heavy trucks, such as drive-line or transmission brakes rather than compression brakes. Significant gains may have to wait for the commercial availability of electronic noise-canceling systems or other advanced technology. Maintenance vehicles will be turned off during periods of inactivity. Operators will

be instructed with techniques to further diminish noise production. Vehicles with smaller motors will be purchased when feasible.

c. Generators

The NPS has already converted the water-pumping system at Wonder Lake to a quiet, photovoltaic power instead of a diesel generator. The Savage Check Station is powered by wind and photovoltaics, both quieter than generators. Lighting at the Teklanika Rest Stop is provided by photovoltaic power with batteries. RV generators in campgrounds are restricted to operating within a specified six hours per day, from 8am-10am and 4pm-8pm. Future actions can quiet almost all energy production in the western part of the park.

- i. In 2002, the NPS plans to install a quieter propane generator at Wonder Lake Ranger Station in a new sound-muffling housing in an insulated building, all of which will reduce noise. In addition, the system will be hooked to a battery bank so the generator will run only 6 hours a day instead of the 24-hour/day run-time presently required.
- ii. Eielson Visitor Center already has the sound-muffling housing and insulated building for its generator. In the future the generator will be converted to propane and a battery bank installed. Toklat Road Camp has a generator with a sound-deadening housing, and the NPS is actively seeking funding for an insulated generator building that would further reduce noise.
- iii. Replicate the photovoltaicwater-pumping system at Wonder Lake in the Savage River and Teklanika River campgrounds.
- iv. Investigate the utility of photovoltaic or other alternative energy systems for Eielson Visitor Center and Wonder Lake facilities that might further reduce generator run-time.
- v. Through education and outreach, encourage campground visitors to eliminate or reduce generator use while in Denali.

d. Aircraft

- i. Establish desired sound conditions for management zones in the backcountry management plan. Identify additional steps that may be taken to minimize the noise of aircraft on the natural park soundscape.
- ii. Account for NPS administrative flights and require the completion of a minimum requirement assessment of all administrative aircraft use in designated wilderness areas or suitable wilderness areas as mandated by the Directors Order #41 and NPS Management Policies. Communicate clearly to staff that aircraft are to be used only when absolutely necessary.
- iii. Establish a committee with the FAA and aircraft users to assist the NPS in developing voluntary guidelines to reduce noise in backcountry areas.
- iv. Investigate requiring quiet technology props for NPS and OAS-contracted planes used in the park.

e. Snowmobiles

In the 1999 *Environmental Assessment for Permanent Closure of the Former Mt. McKinley National Park to Snowmobile Use*, the National Park Service received overwhelming public support for protecting the natural soundscape of the Old Park. A succeeding regulation closed the Old Park to snowmobile use. Enforcement of this closure will greatly help protect the park's natural soundscape. Three additional interim steps are:

- i. Establish desired soundscape conditions for management zones in the backcountry management plan and identify additional steps that may be taken to minimize the noise intrusion of snowmobiles on the natural park soundscape, consistent with allowed uses.
- ii. Investigate the purchase of snowmobiles equipped with four-stroke engines for use on all NPS snowmobile patrols.
- iii. Encourage multiple purposes for all NPS snowmobile use (Ranger Patrols, research studies, sound monitoring, wildlife studies, etc.).

f. Trains

No action is suggested for addressing the impacts of train noise at this time.

g. Amplified Human Voice

- i. Investigate the substitution of multiple, quieter speakers (designed to reach specific, targeted areas) in place of loudspeakers (designed for large scale coverage) at specific locations, such as Eielson Visitor Center, the kennels, and the train depot. Provide noise standards to work crews for keeping music quiet.

4) **Research and Description of Sound Environment**

- a. Continue to refine and implement an acoustical research program to describe the natural sounds of Denali, the resource to be protected. Include sound measurements of variance among key wildlife habitats, management zones, and seasons.

The acoustic monitoring that began in spring of 2001 will provide the data to complete this description.

- b. Describe sound intrusions on the natural soundscape, including amplitude, duration, and frequency of occurrence. This research has already begun with several projects:
  - i. Acoustic monitoring to measure noise events began in spring of 2000.
  - ii. Compilation of backcountry ranger observations of aircraft overflights during patrols; analysis complete for 1999 and 2000.
  - iii. Survey of Denali backpackers in summer of 2000.
  - iv. Monitoring of air traffic in the Ruth Amphitheater in 2000.
- c. Monitor conditions over time to measure change.

5) **Planning**

- a. Soundscape preservation and noise management planning for the backcountry areas of Denali will be included in the backcountry management plan.
- b. Regions of the park covered by the *Entrance Area and Road Corridor Plan* will be addressed during implementation work. A separate soundscape preservation and noise management component will be developed consistent with zones described in Appendix D (Implementation of the Visitor Experience and Resource Protection Program) of the Draft Development Concept Plan and Environmental Impact Statement for the Entrance Area and Road Corridor.
- c. Include goals and objectives related to soundscape management in both resource management and wilderness management components of any updated *Statement for Management* or *Strategic Plan* for Denali.

6) **Education and Interpretation**

- a. Develop educational programs and publications for the general public that interpret the importance of natural sound as a resource of Denali National Park and Preserve and the desired visitor experiences the park is trying to provide.
- b. Create programs for specific user groups whose activities impact the natural soundscape (such as air tour operators, general aviation pilots, Air Force personnel, and snowmobilers) so they are aware of the resource, understand its significance, and become partners in protecting it.
- c. Clearly communicate to park staff and cooperating agencies that aircraft are to be used only when necessary. Develop a short educational program and require all pilots and aircraft users working on behalf of NPS or cooperators to view it.